

Ref/09  
8/30/2001

Serial Number: 09/786,715

ENTERED

CRF Processing Date: \_\_\_\_\_  
 Edited by: \_\_\_\_\_  
 Verified by: \_\_\_\_\_ (STIC sta: \_\_\_\_\_)

PK

- ☐ Changed a file from non-ASCII to ASCII
- ☐ Changed the margins in cases where the sequence text was "wrapped" down to the next line.
- ☐ Edited a format error in the Current Application Data section, specifically: \_\_\_\_\_
- ☐ Edited the Current Application Data section with the actual current number. The number inputted by the applicant was ☐ the prior application data; or ☐ other \_\_\_\_\_
- ☐ Added the mandatory heading and subheadings for "Current Application Data".
- ☐ Edited the "Number of Sequences" field. The applicant spelled out a number instead of using an integer.
- ☐ Changed the spelling of a mandatory field (the headings or subheadings), specifically: \_\_\_\_\_
- ☐ Corrected the SEQ ID NO when obviously incorrect. The sequence numbers that were edited were: \_\_\_\_\_
- ☐ Inserted or corrected a nucleic number at the end of a nucleic line. SEQ ID NO's edited: \_\_\_\_\_
- ☐ Corrected subheading placement. All responses must be on the same line as each subheading. If the applicant placed a response below the subheading, this was moved to its appropriate place.
- ☐ Inserted colons after headings/subheadings. Headings edited included: \_\_\_\_\_
- ☐ Deleted extra, invalid, headings used by an applicant, specifically: \_\_\_\_\_
- ☒ Deleted: ☒ non-ASCII "garbage" at the beginning/end of files; ☐ secretary initials/filename at end of file;  
☐ page numbers throughout text; ☐ other invalid text, such as \_\_\_\_\_
- ☐ Inserted mandatory headings, specifically: \_\_\_\_\_
- ☒ Corrected an obvious error in the response, specifically:  
 21517 response
- ☐ Edited identifiers where upper case is used but lower case is required, or vice versa.
- ☐ Corrected an error in the Number of Sequences field, specifically: \_\_\_\_\_
- ☐ A "Hard Page Break" code was inserted by the applicant. All occurrences had to be deleted.
- ☐ Deleted *ending* stop codon in amino acid sequences and adjusted the "(A)Length:" field accordingly (error due to a PatentIn bug). Sequences corrected: \_\_\_\_\_
- ☐ Other: \_\_\_\_\_

Examiner: The above corrections must be communicated to the applicant in the first Office Action. DO NOT send a copy of this form. 3/1/95

## RAW SEQUENCE LISTING

DATE: 08/30/2001

PATENT APPLICATION: US/09/786,715

TIME: 13:46:03

Input Set : A:\Pto.amc

Output Set: N:\CRF3\08302001\I786715.raw

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3 <110> APPLICANT: Allen, Steve
4     Lu, Albert
5     Thorpe, Cathy
7 <120> TITLE OF INVENTION: Thioredoxin H Homologs
9 <130> FILE REFERENCE: BB-1246
C--> 11 <140> CURRENT APPLICATION NUMBER: US/09/786,715
C--> 12 <141> CURRENT FILING DATE: 2001-06-25
14 <150> PRIOR APPLICATION NUMBER: 60/099,501
15 <151> PRIOR FILING DATE: 1998-09-08
17 <160> NUMBER OF SEQ ID NOS: 13
19 <170> SOFTWARE: Microsoft Office 97
21 <210> SEQ ID NO: 1
22 <211> LENGTH: 870
23 <212> TYPE: DNA
24 <213> ORGANISM: Momordica charantia
26 <400> SEQUENCE: 1
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28 gggcaagtga ttgctgttca taagatagat gaatgggagg gacaattagg aaaatggaag 120
29 gattctgaga aactggttgt ggtggatttt actgcttcct ggtgcgggcc atgccgggca 180
30 attgctccat atttcacaga attggctaag aataacccaa atgtcgcttt cctgaaagtc 240
31 gacgttgacg aattgaacag tgttgctagc aagtgggaga ttaatgcaat gccaacgttt 300
32 gttttcctga aaaaagggaa aataattgag aagatcgttg gtgctgataa agtggggctg 360
33 tcgaagaaaa tattagagct tagtggaact actcccgctg ctacttctac tgcttagaca 420
34 gtctgcttgg aggatgtgat ccctctggtg caatgggtgat tccgcttttg agtttgatct 480
35 aattgtggat gaaactgtgt ctaaaagatg ttaattgttt ggccttttgg gttttcccct 540
36 ttttaagtgt ggatcatgtg cgcacctctc agttgtgatt ctggtgctag aagcttcagg 600
37 tttcaatgtg gaataaatgg gggcacctgc tctgaaattg aatgacattt ttgcacactt 660
38 ttcattattc ttctgtaaga acttgaattc actgtttttt tttaatctaa ttcttcgtag 720
39 cagtacagtg agatgttctt tcagcttggt tagcaacttc ttaatccctc tcctggcttt 780
40 tattttctta ttattggaat ggaacttaga agaatcgaag ttgttatgat ttgttaaaag 840
41 tatttgttgt taaaaaaaaa aaaaaaaaaa 870
43 <210> SEQ ID NO: 2
44 <211> LENGTH: 122
45 <212> TYPE: PRT
46 <213> ORGANISM: Momordica charantia
48 <400> SEQUENCE: 2
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50   1           5           10          15
52 Glu Gly Gln Leu Gly Lys Trp Lys Asp Ser Glu Lys Leu Val Val Val
53           20           25           30
55 Asp Phe Thr Ala Ser Trp Cys Gly Pro Cys Arg Ala Ile Ala Pro Tyr
56           35           40           45
58 Phe Thr Glu Leu Ala Lys Asn Asn Pro Asn Val Ala Phe Leu Lys Val
59           50           55           60
61 Asp Val Asp Glu Leu Asn Ser Val Ala Ser Lys Trp Glu Ile Asn Ala
62   65           70           75           80
64 Met Pro Thr Phe Val Phe Leu Lys Lys Gly Lys Ile Ile Glu Lys Ile

```

## RAW SEQUENCE LISTING

DATE: 08/30/2001

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TIME: 13:46:03

Input Set : A:\Pto.amc

Output Set: N:\CRF3\08302001\I786715.raw

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65          85          90          95
67 Val Gly Ala Asp Lys Val Gly Leu Ser Lys Lys Ile Leu Glu Leu Ser
68          100          105          110
70 Gly Thr Thr Pro Ala Ala Thr Ser Thr Ala
71          115          120
73 <210> SEQ ID NO: 3
74 <211> LENGTH: 574
75 <212> TYPE: DNA
76 <213> ORGANISM: Catalpa speciosa
78 <400> SEQUENCE: 3
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80 aaatggcttc ttcagaagag ggacaagtga tcggttgcca ctccgtcgac gaggggaagg 120
81 agcagttcca gaagggtggt gactctaaga aactggtggt aatagacttc acggcttcct 180
82 ggtgcggacc atgccgtttc attgctccaa tcttggtgta gatggccaag aagacacccc 240
83 atgtcatatt cctgaaagtc gacgtggatg aactcaagac tgttgctgag gaattcaaag 300
84 tggaggctat gccgaccttc gtgttcctca aggaaggga agaagtggaa aggcttggg 360
85 gagcaaggaa ggaggaattg caggccacag ttgagaaaca tggcgctatc actgcttgat 420
86 gctgtttcaa tgttttagtta tgtaatatat gatgatgctt ggaataataa tgtcttaagt 480
87 tatccagatc gtatgtgact gacgtttctg ttgttatgtg gattgttatt gttaatgtaa 540
88 tgtaatggag tgtcttaaaa aaaaaaaaaa aaaa 574
90 <210> SEQ ID NO: 4
91 <211> LENGTH: 118
92 <212> TYPE: PRT
93 <213> ORGANISM: Catalpa speciosa
95 <400> SEQUENCE: 4
96 Met Ala Ser Ser Glu Glu Gly Gln Val Ile Gly Cys His Ser Val Asp
97 1 5 10 15
98 Glu Trp Lys Glu Gln Phe Gln Lys Gly Val Asp Ser Lys Lys Leu Val
99 20 25 30
100 Val Ile Asp Phe Thr Ala Ser Trp Cys Gly Pro Cys Arg Phe Ile Ala
101 35 40 45
102 Pro Ile Leu Ala Glu Met Ala Lys Lys Thr Pro His Val Ile Phe Leu
103 50 55 60
104 Lys Val Asp Val Asp Glu Leu Lys Thr Val Ala Glu Glu Phe Lys Val
105 65 70 75 80
106 Glu Ala Met Pro Thr Phe Val Phe Leu Lys Glu Gly Lys Glu Val Glu
107 85 90 95
108 Arg Leu Val Gly Ala Arg Lys Glu Glu Leu Gln Ala Thr Val Glu Lys
109 100 105 110
110 His Gly Ala Ile Thr Ala
111 115
120 <210> SEQ ID NO: 5
121 <211> LENGTH: 738
122 <212> TYPE: DNA
123 <213> ORGANISM: Glycine max
125 <400> SEQUENCE: 5
126 gcaccaggaa attcttttagt tgtaactgac aaagttttct gagaaaataa ggattattat 60
127 tgagagaatg gctggctcat cggaagaggg acaagtcatt agctgccaca ccgttgaaga 120
128 atggaacgat caactccaga agggcaacga atccaagaaa ctcatgttg tggtttttac 180

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## RAW SEQUENCE LISTING

DATE: 08/30/2001

PATENT APPLICATION: US/09/786,715

TIME: 13:46:03

Input Set : A:\Pto.amc

Output Set: N:\CRF3\08302001\I786715.raw

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129 tgcttcttgg tgtggaccat gccgtttcat tgcaccattc ttggctgagc tggctaagaa 240
130 gttcacaagt gtcatatcc taaaggtgga tgtggacgaa ttaaagagtg tttctcaaga 300
131 ttgggctatt gaggtatgc ccacttttgt gtttgtgaaa gagggaaacgc ttctggacaa 360
132 agtgggtgga gcaaagaagg atgagctgca gcagaaaata cagaaacatg tggcttcagc 420
133 tagtgcttaa tctagctcac cttcagaaac tttatatatg cgctttcttt tcataatctt 480
134 gtactagact tatgttggtt tttctgttat tgcaccaatc agcttttcaa aggtgatgac 540
135 tcctatcatc tatttctgaa tagtagtaac tggtcctttc ttccgtctta aataatagt 600
136 gatggtgcta tatcatgaat cttaattaca tagaccttcc tgttttccct tttagtatta 660
137 aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaacaataaa 720
138 aaaaacaaaa aaaaaaaaaa 738

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140 &lt;210&gt; SEQ ID NO: 6

141 &lt;211&gt; LENGTH: 120

142 &lt;212&gt; TYPE: PRT

143 &lt;213&gt; ORGANISM: Glycine max

145 &lt;400&gt; SEQUENCE: 6

146 Met Ala Gly Ser Ser Glu Glu Gly Gln Val Ile Ser Cys His Thr Val

147 1 5 10 15

149 Glu Glu Trp Asn Asp Gln Leu Gln Lys Gly Asn Glu Ser Lys Lys Leu

150 20 25 30

152 Ile Val Val Asp Phe Thr Ala Ser Trp Cys Gly Pro Cys Arg Phe Ile

153 35 40 45

155 Ala Pro Phe Leu Ala Glu Leu Ala Lys Lys Phe Thr Ser Val Ile Phe

156 50 55 60

158 Leu Lys Val Asp Val Asp Glu Leu Lys Ser Val Ser Gln Asp Trp Ala

159 65 70 75 80

161 Ile Glu Ala Met Pro Thr Phe Val Phe Val Lys Glu Gly Thr Leu Leu

162 85 90 95

164 Asp Lys Val Val Gly Ala Lys Lys Asp Glu Leu Gln Gln Lys Ile Gln

165 100 105 110

167 Lys His Val Ala Ser Ala Ser Ala

168 115 120

170 &lt;210&gt; SEQ ID NO: 7

171 &lt;211&gt; LENGTH: 601

172 &lt;212&gt; TYPE: DNA

173 &lt;213&gt; ORGANISM: Glycine max

175 &lt;400&gt; SEQUENCE: 7

176 gcacgagctc tctctctcta gacttagatt ttgtgaatgg ctgaagtgga agagggacag 60

177 gtcacgcggc tccacaccgt tgatgagtgg aagctgcaac tccagaatgc aaaagactcc 120

178 aaaaaactga ttgtggtgga ttttactgct tcttggtgtg gtccatgccg ttttatggcc 180

179 ccagttcttg cagagattgc aaagaaaact cctgaattga tcttctcaa agtggatgtg 240

180 gatgaagtga ggcctgttgc tgaggaatat tccattgagg ccatgccaac cttcctcttc 300

181 ttgaaagatg gcgagatcgt ggacaagggtg gttggtgcta gtaaggatga ctttcaagcc 360

182 accatagcca agcatgcac tgctgttgct gctgcttctt cttcttgaag tgaagtatca 420

183 taatatgaaa gaagacaaag aataatgcat tttaatgttt tcaagtcagt ttggatgttt 480

184 tctctatgga cattgagttg gcagaacatc gagtgatgta taaaaataaa attgttgcac 540

185 tctctttttt tcgtaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 600

186 a 601

188 &lt;210&gt; SEQ ID NO: 8

189 &lt;211&gt; LENGTH: 123

## RAW SEQUENCE LISTING

DATE: 08/30/2001

PATENT APPLICATION: US/09/786,715

TIME: 13:46:03

Input Set : A:\Pto.amc

Output Set: N:\CRF3\08302001\I786715.raw

190 &lt;212&gt; TYPE: PRT

191 &lt;213&gt; ORGANISM: Glycine max

193 &lt;400&gt; SEQUENCE: 8

194 Met Ala Glu Val Glu Glu Gly Gln Val Ile Gly Val His Thr Val Asp

195 1 5 10 15

197 Glu Trp Lys Leu Gln Leu Gln Asn Ala Lys Asp Ser Lys Lys Leu Ile

198 20 25 30

200 Val Val Asp Phe Thr Ala Ser Trp Cys Gly Pro Cys Arg Phe Met Ala

201 35 40 45

203 Pro Val Leu Ala Glu Ile Ala Lys Lys Thr Pro Glu Leu Ile Phe Leu

204 50 55 60

206 Lys Val Asp Val Asp Glu Val Arg Pro Val Ala Glu Glu Tyr Ser Ile

207 65 70 75 80

209 Glu Ala Met Pro Thr Phe Leu Phe Leu Lys Asp Gly Glu Ile Val Asp

210 85 90 95

212 Lys Val Val Gly Ala Ser Lys Asp Asp Leu Gln Ala Thr Ile Ala Lys

213 100 105 110

215 His Ala Ser Ala Val Ala Ala Ala Ser Ser Ser

216 115 120

218 &lt;210&gt; SEQ ID NO: 9

219 &lt;211&gt; LENGTH: 614

220 &lt;212&gt; TYPE: DNA

221 &lt;213&gt; ORGANISM: Vernonia mespilifolia

223 &lt;400&gt; SEQUENCE: 9

224 gcacgaggct aaataccatt tgaaagctaa aaaaaaatct ttgaattagg ttttcttgaa 60

225 gaagtttgag aaaaaaatg gcggaagaag gagttgtaac cggaatccac accgtcgacc 120

226 agtggaaatga gcaacttgag aagcacaagg gaactgacaa attggtggtt gtggatttca 180

227 ccgcctcatg gtgtggtcct tgccgtgtga ttgcaccaat cttggctgat ttgctaaga 240

228 agatgccccca tgttaccttc cttaaaggttg atgtggatga actcgagagc gttgctcagg 300

229 agtgggtcagt ggaggcaatg ccgactttcc tgtttctcaa gggcggagtg aaagtggaca 360

230 aggttgtggg tgctaagaaa gacgaacttc atgcctgcat cgtcaagcat tctgctgcta 420

231 cagtttctgc ttaacgtact acataatatg attatcttat cagcaactta ttagtctctt 480

232 ttcggatgtg ttgttgattt gctttgtggt aaaaccttag attttgaata ttgtccttgt 540

233 aaccttgggt tataacttgc tctttcatct atatgcataa attgaagttg ctgtattaaa 600

234 aaaaaaaaaa aaaa 614

236 &lt;210&gt; SEQ ID NO: 10

237 &lt;211&gt; LENGTH: 118

238 &lt;212&gt; TYPE: PRT

239 &lt;213&gt; ORGANISM: Vernonia mespilifolia

241 &lt;400&gt; SEQUENCE: 10

242 Met Ala Glu Glu Gly Val Val Thr Gly Ile His Thr Val Asp Gln Trp

243 1 5 10 15

245 Asn Glu Gln Leu Glu Lys His Lys Gly Thr Asp Lys Leu Val Val

246 20 25 30

248 Asp Phe Thr Ala Ser Trp Cys Gly Pro Cys Arg Val Ile Ala Pro Ile

249 35 40 45

251 Leu Ala Asp Phe Ala Lys Lys Met Pro His Val Thr Phe Leu Lys Val

252 50 55 60

254 Asp Val Asp Glu Leu Glu Ser Val Ala Gln Glu Trp Ser Val Glu Ala

## RAW SEQUENCE LISTING

DATE: 08/30/2001

PATENT APPLICATION: US/09/786,715

TIME: 13:46:03

Input Set : A:\Pto.amc

Output Set: N:\CRF3\08302001\I786715.raw

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255 65 70 75 80
257 Met Pro Thr Phe Leu Phe Leu Lys Gly Gly Val Lys Val Asp Lys Val
258 85 90 95
260 Val Gly Ala Lys Lys Asp Glu Leu His Ala Cys Ile Val Lys His Ser
261 100 105 110
263 Ala Ala Thr Val Ser Ala
264 115
266 <210> SEQ ID NO: 11
267 <211> LENGTH: 114
268 <212> TYPE: PRT
269 <213> ORGANISM: Arabidopsis thaliana
271 <400> SEQUENCE: 11
272 Met Ala Ser Glu Glu Gly Gln Val Ile Ala Cys His Thr Val Glu Thr
273 1 5 10 15
275 Trp Asn Glu Gln Leu Gln Lys Ala Asn Glu Ser Lys Thr Leu Val Val
276 20 25 30
278 Val Asp Phe Thr Ala Ser Trp Cys Gly Pro Cys Arg Phe Ile Ala Pro
279 35 40 45
281 Phe Phe Ala Asp Leu Ala Lys Lys Leu Pro Asn Val Leu Phe Leu Lys
282 50 55 60
284 Val Asp Thr Asp Glu Leu Lys Ser Val Ala Ser Asp Trp Ala Ile Gln
285 65 70 75 80
287 Ala Met Pro Thr Phe Met Phe Leu Lys Glu Gly Lys Ile Leu Asp Lys
288 85 90 95
290 Val Val Gly Ala Lys Lys Asp Glu Leu Gln Ser Thr Ile Ala Lys His
291 100 105 110
293 Leu Ala
296 <210> SEQ ID NO: 12
297 <211> LENGTH: 126
298 <212> TYPE: PRT
299 <213> ORGANISM: Nicotiana tabacum
301 <400> SEQUENCE: 12
302 Met Ala Ala Asn Asp Ala Thr Ser Ser Glu Glu Gly Gln Val Phe Gly
303 1 5 10 15
305 Cys His Lys Val Glu Glu Trp Asn Glu Tyr Phe Lys Lys Gly Val Glu
306 20 25 30
308 Thr Lys Lys Leu Val Val Val Asp Phe Thr Ala Ser Trp Cys Gly Pro
309 35 40 45
311 Cys Arg Phe Ile Ala Pro Ile Leu Ala Asp Ile Ala Lys Lys Met Pro
312 50 55 60
314 His Val Ile Phe Leu Lys Val Asp Val Asp Glu Leu Lys Thr Val Ser
315 65 70 75 80
317 Ala Glu Trp Ser Val Glu Ala Met Pro Thr Phe Val Phe Ile Lys Asp
318 85 90 95
320 Gly Lys Glu Val Asp Arg Val Val Gly Ala Lys Lys Glu Glu Leu Gln
321 100 105 110
323 Gln Thr Ile Val Lys His Ala Ala Pro Ala Thr Val Thr Ala
324 115 120 125
326 <210> SEQ ID NO: 13

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VERIFICATION SUMMARY

DATE: 08/30/2001

PATENT APPLICATION: US/09/786,715

TIME: 13:46:04

Input Set : A:\Pto.amc

Output Set: N:\CRF3\08302001\I786715.raw

L:11 M:270 C: Current Application Number differs, Replaced Application Number

L:12 M:271 C: Current Filing Date differs, Replaced Current Filing Date

PCT09

## RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/786,715

DATE: 07/27/2001

TIME: 20:04:47

Input Set : A:\BB-1246 Seq List.txt

Output Set: N:\CRF3\07272001\I786715.raw

Does Not Comply  
Corrected Diskette Needed

3 <110> APPLICANT: Allen, Steve  
 4 Lu, Albert  
 5 Thorpe, Cathy  
 7 <120> TITLE OF INVENTION: Thioredoxin H Homologs  
 9 <130> FILE REFERENCE: BB-1246  
 C--> 11 <140> CURRENT APPLICATION NUMBER: US/09/786,715  
 C--> 12 <141> CURRENT FILING DATE: 2001-06-25  
 14 <150> PRIOR APPLICATION NUMBER: 60/099,501  
 W--> 15 <151> PRIOR FILING DATE: September 8, 1998 1998-09-08  
 17 <160> NUMBER OF SEQ ID NOS: 13  
 19 <170> SOFTWARE: Microsoft Office 97

## ERRORED SEQUENCES

326 <210> SEQ ID NO: 13  
 327 <211> LENGTH: 118  
 328 <212> TYPE: PRT  
 329 <213> ORGANISM: Ricinus communis  
 331 <400> SEQUENCE: 331  
 332 Met Ala Ala Glu Glu Gly Gln Val Ile Gly Cys His Thr Val Glu Ala  
 333 1 5 10 15  
 335 Trp Asn Glu Gln Leu Gln Lys Gly Asn Asp Thr Lys Gly Leu Ile Val  
 336 20 25 30  
 338 Val Asp Phe Thr Ala Ser Trp Cys Gly Pro Cys Arg Phe Ile Ala Pro  
 339 35 40 45  
 341 Phe Leu Ala Glu Leu Ala Lys Lys Leu Pro Asn Val Thr Phe Leu Lys  
 342 50 55 60  
 344 Val Asp Val Asp Glu Leu Lys Thr Val Ala His Glu Trp Ala Val Glu  
 345 65 70 75 80  
 347 Ser Met Pro Thr Phe Met Phe Leu Lys Glu Gly Lys Ile Met Asp Lys  
 348 85 90 95  
 350 Val Val Gly Ala Lys Lys Asp Glu Leu Gln Gln Thr Ile Ala Lys His  
 351 100 105 110  
 353 Met Ala Thr Ala Ser Thr  
 354 115  
 E--> 356 6



## VERIFICATION SUMMARY

PATENT APPLICATION: US/09/786,715

DATE: 07/27/2001

TIME: 20:04:48

Input Set : A:\BB-1246 Seq List.txt

Output Set: N:\CRF3\07272001\I786715.raw

L:11 M:270 C: Current Application Number differs, Replaced Application Number  
L:12 M:271 C: Current Filing Date differs, Replaced Current Filing Date  
L:15 M:256 W: Invalid Numeric Header Field, Wrong Prior FILING DATE:YYYY-MM-DD  
L:356 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:13